

01-04-00

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Herbert Gropp et al.  
 Serial No: Art Unit: 3748  
 Filing Date:  
 Title: BUILT-UP CAMSHAFT  
 Examiner  
 Prior Application Examiner: Weilun Lo  
 Attorney's Docket Number: RUM212

jc586 U.S. PTO  
 09/476521  
 01/03/00

January 3, 2000

Rum212T1

## TRANSMITTAL LETTER

Hon. Commissioner of Patents and Trademarks  
 Washington, D.C. 20231

SIR:

Transmitted herewith for filing is:

- <X> Request for Filing a Continuation Application under 37 CFR 1.60.
  - <X> Photocopy of the Patent Application, serial number 09/016,597, as filed on January 30, 1998 (8 pages, 1 page of Abstract and 1 sheet of drawings)
  - <X> Photocopy of the Inventor Declaration as filed in prior Patent Application, Serial No. 09/016,597, on March 30, 1998
  - (X) Enclosed is a check to cover the fee in the amount of \$345.00.
  - (X) The applicant hereby petitions the Commissioner of Patents and Trademarks to extend the time for response to any Office Action outstanding in the above captioned matter as necessary to avoid abandonment of the application. Please charge my deposit account No.11-0224 in the amount required to cover the cost of the extension. Any deficiency or overpayment should be charged or credited to the above account.
  - (X) The Commissioner is hereby authorized to charge any fees under 35 U.S.C. 1.16, and 1.17, after a mailing of a Notice of Allowance under 35 USC 1.18 or any additional fees which may be required during the entire pendency of the application, or credit any overpayment, to Acct. No.11-0224. A duplicate copy of this sheet is enclosed. If and only if account funds should be insufficient, immediately contact our associate, Lisa Zumwalt, at (703)415-0579, who will pay immediately to avoid deprivation of rights.
  - ( ) Please charge my Deposit Account No.11-0224 in the amount of \$\_\_\_\_\_. A duplicate copy of this sheet is enclosed.
- A signature or signatures required for the above recited document(s) is (are) provided herebelow. Such signature(s) also provide(s) ratification for any required signature appearing to be defective in the above recited document(s).

*Horst M. Kasper*  
 Horst M. Kasper, 13 Forest Drive, Warren, N.J. 07059  
 Reg. No. 28,559 Tel. (908) 757-2839

## Express Mail Certification:

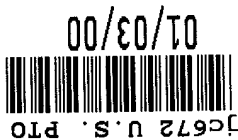
I hereby certify that this correspondence is being deposited with Express Mail Post Office to Addressee in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231,

on.....**JAN 0 3 2000**....."Express Mail Mailing Label No": **TB 173616 476 US**.....

Signature.....**STAN-LAS**..... Date.....**JAN 0 3 2000**.....  
 \*%pt0:trans0(Rum212T1(January 3, 2000(tm

jc672 U.S. PTO  
 01/03/00

09476521 010300



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Herbert Gropp et al.  
Serial No:  
Filing Date:  
Title: BUILT-UP CAMSHAFT  
Examiner:  
Prior Application Examiner: Weilun Lo  
Attorney's Docket Number: RUM212  
Art Unit: 3748

January 3, 2000

RUM212R1

REQUEST FOR FILING A CONTINUATION APPLICATION  
UNDER 37 CFR 1.60

Assistant Commissioner for Patents  
Washington, D.C. 20231

SIR:

This is a request for filing a

<X> continuation application under 37 CFR 1.60  
< > divisional application under 37 CFR 1.60

of pending prior Application Number 09/016,597, filed on January 30, 1998, entitled BUILT-UP CAMSHAFT.

1. Enclosed is a copy of the latest inventor - signed prior application, including a copy of the oath or declaration showing the original signature or an indication it was signed. I hereby verify that the papers are a true copy of the latest signed prior application number 09/016,597, and further that all statements made herein of my own knowledge are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

TOTAL CLAIMS	5	-	20	=	X	=	\$
INDEPENDENT CLAIMS	1	-	3	=	X	=	\$
MULTIPLE DEPENDENT CLAIMS						=	\$
BASIC FEE						=	\$ 690.00
TOTAL OF ABOVE CALCULATIONS =						\$	690.00
REDUCTION BY 50% FOR FILING BY SMALL ENTITY =						\$	345.00
TOTAL:						=	\$ 345.00

2. ☒ A verified statement to establish small entity status under 37 CFR 1.9 and 1.27  
    ☐ is enclosed  
    ☒ was filed in prior application No. 09/016,597 and such status is still proper and desired (37 CFR 1.28(a)).
3. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required under 37 CFR 1.16 and 1.17, or credit any overpayment to Deposit Account No.11-0224. A duplicate copy of this sheet is enclosed.
4. ☒ A check in the amount of \$345.00 is enclosed.
5. ☐ Cancel in this application original claims ..... of the prior application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
6. ☒ The inventor(s) of the invention being claimed in this application is (are): Herbert Gropp, Dietmar Klose, Claus-Peter Durlich, Manfred Janssen
7. ☐ The application is being filed by less than all the inventors named in the prior application. In accordance with 37 CFR 1.60(b), the Commissioner is requested to delete the name(s) of the following person or persons who are not inventors of the invention being claimed in this application:
8. ☒ Amend the specification by inserting before the first line the sentence:  
    "This application is a ☒ continuation ☐ division of application number 09/016,597, filed on January 30, 1998, now pending."
9. ☐ New formal drawings are enclosed.
10. ☒ Priority of a foreign application serial number 197 03 260.3, filed on January 30, 1997 in the Germany is claimed under 35 U.S.C. 119(a) - (d).  
    ☒ acknowledgement was made of a claim for foreign under 35 USC § 119(a)-(d) that all of the certified copies of the priority documents have been received; acknowledgement that all of the certified copies of the priority documents have been received was included in the Office Action mailed on October 16, 1998 (paper No. 8) in prior application number 09/016,597, filed January 30, 1998.

[illegible]

Page 3 of 3

1. The following table shows the number of people who have been convicted of a crime in the United States since 1990. The table is divided into two columns: "Number of people convicted" and "Year".	
Number of people convicted	Year
100,000	1990
120,000	1991
140,000	1992
160,000	1993
180,000	1994
200,000	1995
220,000	1996
240,000	1997
260,000	1998
280,000	1999
300,000	2000
320,000	2001
340,000	2002
360,000	2003
380,000	2004
400,000	2005
420,000	2006
440,000	2007
460,000	2008
480,000	2009
500,000	2010
520,000	2011
540,000	2012
560,000	2013
580,000	2014
600,000	2015
620,000	2016
640,000	2017
660,000	2018
680,000	2019
700,000	2020
720,000	2021
740,000	2022
760,000	2023
780,000	2024
800,000	2025
820,000	2026
840,000	2027
860,000	2028
880,000	2029
900,000	2030
920,000	2031
940,000	2032
960,000	2033
980,000	2034
1,000,000	2035
1,020,000	2036
1,040,000	2037
1,060,000	2038
1,080,000	2039
1,100,000	2040
1,120,000	2041
1,140,000	2042
1,160,000	2043
1,180,000	2044
1,200,000	2045
1,220,000	2046
1,240,000	2047
1,260,000	2048
1,280,000	2049
1,300,000	2050
1,320,000	2051
1,340,000	2052
1,360,000	2053
1,380,000	2054
1,400,000	2055
1,420,000	2056
1,440,000	2057
1,460,000	2058
1,480,000	2059
1,500,000	2060
1,520,000	2061
1,540,000	2062
1,560,000	2063
1,580,000	2064
1,600,000	2065
1,620,000	2066
1,640,000	2067
1,660,000	2068
1,680,000	2069
1,700,000	2070
1,720,000	2071
1,740,000	2072
1,760,000	2073
1,780,000	2074
1,800,000	2075
1,820,000	2076
1,840,000	2077
1,860,000	2078
1,880,000	2079
1,900,000	2080
1,920,000	2081
1,940,000	2082
1,960,000	2083
1,980,000	2084
2,000,000	2085
2,020,000	2086
2,040,000	2087
2,060,000	2088
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2,100,000	2090
2,120,000	2091
2,140,000	2092
2,160,000	2093
2,180,000	2094
2,200,000	2095
2,220,000	2096
2,240,000	2097
2,260,000	2098
2,280,000	2099
2,300,000	2100

Herbert Gropp  
Dietmar Klose  
Claus-Peter Dürlich  
Manfred Janssen

## BUILT-UP CAMSHAFT

rum205

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Telefax: (908)668-5262  
Reg.No. 28559; Docket No.: rum205SP

- 1 -

Variable	Mean	SD	Min	Max
Age	34.2	10.5	18	65
Gender	0.52	0.50	0	1
Marital status	0.65	0.48	0	1
Education	12.8	2.1	9	16
Income	15.2	8.5	5	35
Occupation	1.2	0.8	0	2
Health status	1.8	0.9	1	3
Stress level	2.5	1.2	1	4
Life satisfaction	3.2	1.5	1	5
Resilience	2.8	1.1	1	4
Optimism	3.5	1.3	1	5
Self-efficacy	3.8	1.4	1	5
Emotional stability	3.1	1.2	1	5
Prosocial behavior	3.4	1.3	1	5
Empathy	3.6	1.4	1	5
Agreeableness	3.7	1.5	1	5
Conscientiousness	3.9	1.6	1	5
Openness	3.3	1.4	1	5
Neuroticism	2.9	1.3	1	5
Extraversion	3.0	1.2	1	5
Introversion	2.7	1.1	1	5
Depression	2.1	1.0	1	5
Anxiety	2.3	1.1	1	5
Stress coping	2.6	1.2	1	5
Life goals	3.0	1.3	1	5
Values	3.1	1.4	1	5
Beliefs	3.2	1.5	1	5
Attitudes	3.3	1.6	1	5
Perceptions	3.4	1.7	1	5
Thoughts	3.5	1.8	1	5
Feelings	3.6	1.9	1	5
Behaviors	3.7	2.0	1	5
Interactions	3.8	2.1	1	5
Outcomes	3.9	2.2	1	5
Impacts	4.0	2.3	1	5
Consequences	4.1	2.4	1	5
Effects	4.2	2.5	1	5
Results	4.3	2.6	1	5
Findings	4.4	2.7	1	5
Conclusions	4.5	2.8	1	5
Recommendations	4.6	2.9	1	5
Suggestions	4.7	3.0	1	5
Notes	4.8	3.1	1	5
Comments	4.9	3.2	1	5
Observations	5.0	3.3	1	5
Insights	5.1	3.4	1	5
Reflections	5.2	3.5	1	5
Experiences	5.3	3.6	1	5
Learnings	5.4	3.7	1	5
Takeaways	5.5	3.8	1	5
Key points	5.6	3.9	1	5
Summary	5.7	4.0	1	5
Overview	5.8	4.1	1	5
Details	5.9	4.2	1	5
Specifics	6.0	4.3	1	5
Examples	6.1	4.4	1	5
Instances	6.2	4.5	1	5
Cases	6.3	4.6	1	5
Scenarios	6.4	4.7	1	5
Hypotheticals	6.5	4.8	1	5
Thought experiments	6.6	4.9	1	5
Simulations	6.7	5.0	1	5
Models	6.8	5.1	1	5
Theories	6.9	5.2	1	5
Concepts	7.0	5.3	1	5
Ideas	7.1	5.4	1	5
Conceptualizations	7.2	5.5	1	5
Frameworks	7.3	5.6	1	5
Paradigms	7.4	5.7	1	5
Approaches	7.5	5.8	1	5
Methods	7.6	5.9	1	5
Techniques	7.7	6.0	1	5
Procedures	7.8	6.1	1	5
Protocols	7.9	6.2	1	5
Guidelines	8.0	6.3	1	5
Standards	8.1	6.4	1	5
Best practices	8.2	6.5	1	5
Recommendations	8.3	6.6	1	5
Suggestions	8.4	6.7	1	5
Notes	8.5	6.8	1	5
Comments	8.6	6.9	1	5
Observations	8.7	7.0	1	5
Insights	8.8	7.1	1	5
Reflections	8.9	7.2	1	5
Experiences	9.0	7.3	1	5
Learnings	9.1	7.4	1</	

1. Field of the Invention

2. Brief Description of the Background of the Invention Including Prior Art

The shaping of the cams from the pipe by internal high-pressure deformation is also being considered.

- 2 -

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2
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## 1. Purposes of the Invention

Based on the state of the art, the present invention has the object to build a camshaft with commercially available materials and semifinished materials with a simple technology, wherein said camshaft is manufactured in mass production at an advantageous cost.

These and other objects and advantages of the present invention will become evident from the description which follows.

## 2. Brief Description of the Invention

The present invention provides for a camshaft according to the characterizing portion of claim 1.

Suitable embodiments of the invention are contained in the subclaims.

The attachment of the cams and of the other parts on the pipe is performed with a longitudinal compression joint. The pipe is coated, preferably with a finely crystalline phosphate coating, as known from the East German printed patent document 015 2972, such that the overdimensioned cams, which are to be slipped, do not score and seize, that the friction tightness is increased, and that no tribocorrosion is generated later on. Following a careful







camshaft segment;

Fig. 2 is a schematic sectional view through a camshaft end;

Fig. 3 is a view of the entire camshaft on a reduced scale.

#### DESCRIPTION OF INVENTION AND PREFERRED EMBODIMENT

The jointing coating 2 between the pipe 1 and the cams 3 of light-weight sheet metal construction is indicated in Fig. 1. However, the jointing coating 2 in fact does not have a measurable radial extension.

In Fig. 2, the pipe has an inner coating 5, such that the end piece 4 can be pressed in.

Fig. 3 shows the entire camshaft, wherein all parts to be disposed on the pipe, are longitudinally pressed onto the camshaft. For simplicity's sake, the cams are represented as disks.

### Patent Claims

1. A built-up camshaft comprising  
a pipe or a solid rod,  
cams,  
bearing rings,  
end pieces, and  
other parts, wherein the cams (3), the end pieces (6), the  
bearing rings, and the other parts are connected by means of  
longitudinal compression joints to the pipe or to the solid  
rod, wherein the parts to be connected are provided with a  
suitable surface coating, and wherein the surface coating  
prevents a tribocorrosion and increases the load capacity as  
compared to conventional compression joints.
2. The camshaft according to claim 1, wherein  
the coating (2, 5) is a joint-stable conversion coating.
3. The camshaft according to claim 1, wherein  
the coating (2, 5) is a metal coating or a cement coating.
4. The camshaft according to claim 1, wherein  
the pipe or the solid rod and/or the cams, the end pieces,  
the bearing rings, and the other parts are made out of

metal, ceramics, plastics or other materials, by cutting or non-cutting, by milling or forging in massive or profiled form.

5. The camshaft according to claim 1, wherein the outer jacket face of the pipe or of the solid rod has a drawn quality or is completely or partially mechanically machined.

[illegible][illegible]



[illegible]

Applicant: Herbert Gropp et al.  
Serial No: Art Unit:  
Filing Date: January 30, 1998  
Title: BUILT-UP CAMSHAFT  
Examiner:

**DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION**  
**Erklärung Für Patentanmeldungen Mit Vollmacht**  
**German Language Declaration rum205**

Als nachstehend benannter Erfinder erkläre ich hiermit an  
Eidesstatt:

As a below named inventor, I hereby declare that:

daß mein Wohnsitz, meine Postanschrift und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

My residence, post office address and citizenship are as stated below next to my name,

daß ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

## Gebaute Nockenwelle

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

## BUILT-UP CAMSHAFT

deren Beschreibung (nur eines der nachfolgenden Kästchen ankreuzen)

the specification of which (check only one item below)

< > hier beigefügt ist.  
is attached hereto.







PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 USC 120:

FRÜHERE AMERIKANISCHE ANMELDUNGEN ODER DIE USA BENENNENDE INTERNATIONALE PCT-ANMELDUNGEN FÜR VORRECHT UNTER 35 USC 120

U.S. APPLICATIONS		STATUS (Check one)
U.S. Application No.	U.S Filing Date	Patented Pending Abandoned
AMERIKANISCHE ANMELDUNGEN		STAND (ein Kästchen ankreuzen)
Seriennummer	Anmeldedatum	Patentiert Anhängig Aufgegeben
		< > < > < >

PCT APPLICATIONS DESIGNATING THE U.S.

PCT Application Number	PCT Filing Date	U.S.Ser.Nos.
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**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number)

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Full name of fourth joint inventor, if any

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Unterschrift des vierten Erfinders  
Fourth Inventor's signature

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